Welcome to the Spring/Summer edition of the IPM in Health Care Facilities newsletter, published by the IPM in Health Care Facilities Project—a partnership of the Maryland Pesticide Network and Beyond Pesticides in collaboration with the Maryland chapter of Hospitals for a Healthy Environment (MD H2E). The Project enables and facilitates transition to safe pest management practices at Maryland health care facilities. This newsletter is part of the Project’s outreach effort to share information with Maryland health care facilities interested in effective pest management that protects patients, residents, staff and visitors from unnecessary exposure to pesticides.

Facilities participating in the Project’s Partnership Program agree that IPM prioritizes pest prevention and non-chemical interventions as key components to greening their facilities. Under an IPM approach, only least-toxic pesticides are used as a last resort for pest management. This approach is especially important for patient and long-term care populations, which are especially vulnerable to chemical-intensive pest control methods that can cause or exacerbate the very diseases and conditions for which they are being treated.

Feel free to contact us to learn more about how you can improve patient, staff and visitor safety by reducing pest complaints and toxic chemicals in your facility—with no increase in cost.

This issue of the Newsletter focuses on:

- Toxic-free land care for the Spring and Summer  p. 2-3
- We continue our section on chemical profiles with a review of Roundup  p. 3-4
- New science: We end with a study that exposes how low dose exposures of endocrine disrupting chemicals can be toxic to people  p. 4-5

SAVE THE DATE!

Maryland Hospitals for a Healthy Environment’s Annual Conference: Environmental Excellence in Health Care

- NOVEMBER 14, 2012 -
Land Care for the Spring and Summer

Our understanding of natural land care has significantly improved. Rain gardens, for example, protect the environment by preventing polluted runoff into the Bay and they require less water and are easy to grow because they use plants that are native to the area. Using native vegetation reduces use of pesticides and fertilizers and is an attractive addition to health care facilities grounds that protect patients/residents, visitors, employees and our environment. Using an Integrated Pest Management approach to lawn care will insure safe non-chemical methods are used and least-toxic pesticides and fertilizers are only used as a last resort. A healthcare facility must be a safe haven for new families, children, the elderly, and people with weakened immune systems. This Spring and Summer are the perfect times to rid your lawns of unnecessary toxic chemicals that put people and the environment at risk.

**Tips For Healthy, Toxic-Free Lawns. Spring Land Care Goals**

With cool temperatures and ample rain, Spring offers the perfect environment to make the transition to a toxic-free lawn that improves soil biology leading to healthy grasses that naturally limit weeds and pests.

Weeds thrive in soil that is compacted, poorly fertilized, and not pH balanced; and in lawns that are improperly watered, seeded, and mowed. Start with adding grass seed over an existing lawn. As this grass grows in the Spring, it will create a thick lawn which will prevent weeds from taking root.

Spreading compost over grass will increase water retention, increase organic matter, and “feed the soil.” A healthy soil feeds the grass. If a fertilizer is needed, choose organic and use it sparingly. Synthetic fertilizers and chemical pesticides restrict water and air movement in the soil while high nitrogen fertilizers can disrupt the nutrient balance, accelerate turf growth, and increase the need for mowing. Pesticides harm the microorganisms, beneficial insects and earthworms that are essential to maintaining a healthy soil and turf.

Mowing with sharp blades set to three inches minimizes adverse effects and retains the lawn’s competitive ability. A single mowing should never cut off more than 1/3 of grass blades in a single mowing and mulching the grass by leaving the clippings on the grass, will provide up to half the lawn’s nitrogen requirement.

Non-aerated soil is an invitation for weeds. If your lawn is hard, compacted, and full of weeds, aerate to help air, water and fertilizer enter the soil below the surface. Once your lawn is healthy, natural organisms will help it to remain aerated.

Develop healthy soil with proper pH by regularly (at least annually) testing the soil to understand the soil condition and identify deficiencies. The test will identify the need for balancing pH, as well as the need for nutrients such as calcium, magnesium and zinc. Testing also should cover organic material (OM) concentrations.

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**Did you know:**

- Non-target impacts of herbicides, fungicides and broad-spectrum insecticides destroy soil health and many beneficial microbes, fungi, insects and other organisms that can reduce the degree of intervention needed for quality turf and landscape.

- Foot traffic brings lawncare chemicals into your facility.

- Organic materials build ‘deep’ biology in the soil, while synthetic fertilizers lead to turf with shallow root systems.

- Building healthy soil has long-term benefits: in just a couple of seasons, turf will be deeper-rooted and will remain greener in dry periods and into the winter.

- Compost is a source of good microbes and can be top dressed in a 1/3 inch layer on lawn, trees and shrubs.
Tips For Healthy, Toxic-Free Lawn Summer Land Care:

With hotter weather and less rainfall, summer land care is designed to keep lawns green and healthy. Products applied to hospital grounds can be tracked indoors, increasing patients’, visitors’ and employees’ risk of exposure. By maintaining a pesticide-free healthy lawn throughout the summer, the lawn will stay resistant to weeds and pests.

With less summer rainfall it is critical that lawns are not under watered or overwatered to make up for the dry and hot weather. Lawns need one inch of water per week. It is best to water early in the morning to avoid fungal growth and to avoid wasting water through evaporation during peak sunlight. Also, watering heavily and less frequently allows the water to penetrate deeper into the soils. This encourages the roots to grow longer, allowing the grass to better withstand drought.

Just like in the Spring, taller grasses are more drought resistant and prevent weeds from growing. Keep grass height at three to four inches throughout the summer. Do not waste the grass clippings; Summer mulching will allow nutrients and moisture to return to the grass even during hot weather.

Since health care facility grounds are used more in the summer, the increased foot traffic can compact the soil. To avoid this, consider restricting use in areas prone to compaction and use an aerator if the soil becomes too compact.

When selecting a landcare vendor or recontracting with an existing vendor, we encourage you to contract for a turf and landscape program that builds soil health instead of relying on synthetic fertilizers, herbicides, fungicides, and insecticides to treat problems. Healthy soil can eliminate the use of pesticides.

Spring fertilization is generally a lot lighter than in the fall. Properly fertilizing the soil will encourage root growth and promote healthy soil. Fertilizers should not be applied during the summer. It is best for your landcare vendor to use a slow-release organically based fertilizer instead of conventional synthetic fertilizer that includes pesticides of concern to patients/residents at your facility.

Chemical Profile: Roundup

The world’s most popular weed killer can induce morphological changes in vertebrate animals, U.S. biologists studying its effect on amphibians say. University of Pittsburgh researchers have found that the weed killer Roundup, in sub-lethal and environmentally relevant concentrations, causes two species of amphibians to change their shape by interfering with the hormones of tadpoles and potentially many other animals.

The study, “New effects of Roundup on amphibians: Predators reduce herbicide mortality; herbicides induce antipredator morphology” is the first to show that a pesticide can induce morphological changes in a vertebrate animal. The study suggests that the world’s most widely applied herbicide may have much further-reaching effects on non-target species than previous considered.

“Herbicides are not designed to affect animals, but we are learning that they can have a wide range of surprising effects by altering how hormones work in the bodies of animals,” said Dr. Rick Relyea, biological sciences Professor at the University of Pittsburgh.

(continued on p.4)
**Roundup Continued**

This is important because amphibians not only serve as a barometer of the ecosystem’s health, but also as an indicator of potential dangers to other species in the food chain, including humans.”

Roundup is a systemic, broad-spectrum herbicide produced by Monsanto. Glyphosate, the active ingredient in Roundup, is a general herbicide used for eradication of broadleaf weeds. It has been linked to a number of serious human health effects, including increased cancer risk and neurotoxicity, as well as eye, skin, and respiratory irritation. The inert ingredient POEA, formulated in Roundup products, has also been shown to kill human embryonic cells. It is also of particular concern due to its toxicity to aquatic species as well as instances of serious human health effects from acute exposure.

Some of the most widespread uses of glyphosate that have been attracting public attention include its use in invasive weed management and lawn care. The U.S. EPA expects to their review of Roundup to be completed by 2015, at which point it will issue a decision to either continue to allow unrestricted use of glyphosate or institute limitations or a ban on the chemical in light of emerging science.

One of the biggest, longest-lasting controversies about these chemicals is whether the tiny doses that most people are exposed to are harmful.

The report concludes that health effects “are remarkably common” when people or animals are exposed to low doses of endocrine-disrupting compounds. The scientists conclude that scientific evidence “clearly indicates that low doses cannot be ignored.” They cite evidence of a wide range of health effects in people – from fetuses to aging adults – including links to infertility, cardiovascular disease, obesity, cancer, and other disorders. “Whether low doses of endocrine-disrupting compounds influence human disorders is no longer conjecture, as epidemiological studies show that environmental exposures are associated with human diseases and disabilities,” the report says.

Endocrinologists have long known that infinitesimal amounts of estrogen, testosterone, thyroid hormones and other natural hormones can have big health effects, particularly on fetuses.
New Science Continued

It comes as no surprise to them that manmade substances with hormonal properties might have big effects, too. “There truly are no safe doses for chemicals that act like hormones, because the endocrine system is designed to act at very low levels,” Dr. Vandenberg, a postdoctoral fellow at Tufts University’s Levin Lab Center for Regenerative and Developmental Biology, told Environmental Health News.

But many toxicologists subscribe to “the dose makes the poison” conventional wisdom. In other words, it takes a certain size dose of something to be toxic. They also are accustomed to seeing an effect from chemicals called “monotonic,” which means the responses of an animal or person go up or down with the dose.

In the report, the scientists are concerned that government has determined “safe” levels for “a significant number of endocrine-disrupting compounds” that have never been tested at low levels. The authors urged “greatly expanded and generalized safety testing.” “We suggest setting the lowest dose in the experiment below the range of human exposures, if such a dose is known,” they wrote.

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MD H2E’s 5th annual Environmental Excellence in Health Care conference will be held at the University of Maryland School of Nursing November 14th, 2012

This year’s theme is Innovations and Collaborations — MD H2E encourages you to submit an abstract!
Did your facility implement an inventive sustainable program through inter-departmental teamwork?
Did your hospital partner with a farmer, a vendor, or an organization to start a brand new green initiative?
Bringing together different perspectives and thinking creatively to find environmental solutions is at the heart of sustainable health care. MD H2E urges all hospitals and health care providers in Maryland to submit an abstract to present at the 5th annual conference. Find more information and details here:

For more information or to submit an abstract, go to: http://mdh2e.org/
The deadline to submit is Monday, July 16, 2012. Early submission encouraged.